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Amazona kawalli is a valid name for a valid species

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Grantsau & Camargo (1989) gave the name *Amazona kawalli* to a form of parrot very close to the Mealy Amazon *A. farinosa* but which they judged to possess several distinctive diagnostic features. The new form was described on the basis of one dead captive bird, two live captive birds, and two old, misattributed museum specimens. Vuilleumier *et al.* (1992) implied that Grantsau & Camargo (1990) provide additional data in a table of measurements, but in fact these measurements are present, albeit not in tabular form, in the original description.

This unusual circumstance (descriptions of new species of parrot are not frequent) resulted in modest publicity (e.g. Low 1990, Anon. 1991, Arndt 1991) but not outright acceptance. Vuilleumier *et al.* (1992) felt that "there is not enough evidence at present to decide what the status of this form is", and listed it as a *species inquirenda*. More emphatically, Bosch (1991), having first speculated whether subspecific rank would not be more appropriate, came to agree with the late H. E. Wolters (of Museum Koenig, Bonn, and a member of the Standing Committee on Ornithological Nomenclature of the International Ornithological Congress), to whom he referred the description, and who considered that *kawalli* merely represented individual variation within *A. farinosa*. This was also the judgement, quoted by Grantsau & Camargo (1989), of Pinto (1935; also Pinto & Camargo 1954), in whose care the two museum specimens of *kawalli* remained for many decades. Largely because of these doubts, and despite its inclusion by Sibley & Monroe (1993), who may not have been aware of the caution being expressed in some quarters, the new form was not considered in recent reviews of threatened species (Collar *et al.* 1992, 1994), despite its potential categorisation as Data Deficient or near-threatened. However, the problem was clearly of continuing concern in taxonomic, conservation and avicultural terms, so, with the discovery of two specimens

attributable to *kawalli* in European museums, we took steps to investigate the matter further.

Two European specimens of *Amazona kawalli*

The most distinctive feature of prepared specimens of *kawalli* (in its separation from *farinosa*) is red chiefly on the inner proximal webbing of several outermost tail feathers. However, because tails of museum skins are normally preserved in the closed position, it is possible that examples of the species have remained undetected in collections, labelled as either *Amazona farinosa* or Scaly-naped Amazon *A. mercenaria*, which is also very similar and indeed shares the general tail pattern.

In September 1990 the aviculturist for whom the new form is named, N. Kawall, himself picked out a (female) specimen of *kawalli* amongst the series of *mercenaria* held at the Natural History Museum (BMNH) in Tring, U.K. This bird (BMNH 1891.4.1.48) had been received alive by the Zoological Society of London on 2 May 1882 and had died there on 1 June 1883, the skin being labelled both "*Chrysotis mercenaria*" and "*Chrysotis ochrocephala* var.", although it was exhibited under the former name (Anon. 1883). After Kawall's reidentification, it was duly transferred to a separately labelled tray, but its presence was not otherwise advertised. NJC encountered this specimen by chance in 1992 while working on other material.

Then, while visiting the Zoological Museum in Berlin (ZMB) in June 1995, J. Cuddy and AJP found a specimen corresponding closely to *Amazona kawalli* while checking the series of *farinosa*. This bird, a male (ZMB 23.1.160), bore a red type label inscribed "*Amazona farinosa* aberr. *rubricauda* Str.". Inquiry duly revealed that a description of this specimen, using the formulation quoted, had been furnished by Stresemann (1924), who reported that it, too, was a captive bird that had lived in Berlin Zoo from June 1910 until its death in September 1923.

Comparisons of the two "new" specimens

We obtained the loan to BMNH of Stresemann's specimen for comparison with the skin identified by Kawall. In October and November 1995, we reviewed this material and checked it against samples of each of five usually recognised subspecies of *A. farinosa* and the small available series of *A. m. mercenaria*. We took no steps, however, to obtain the loan of one of the paratypes in São Paulo, basing our judgement simply on the original description.

Grantsau & Camargo (1989) identified eight characters that they believed to be diagnostic of *kawalli* when compared with *farinosa*. These were (1) bill dull yellow and grey (in living birds); (2) white strip of bare skin bordering base of bill (dull yellow after death); (3) dark grey periorbital ring (in living birds); (4) edge of folded wing light yellowish-green with no trace of red; (5) general colour much purer green; (6) colour of outer tail-feathers patterned with red and blue; (7)

proportion of terminal yellowish-green forming tail-band reduced (*c.* 20 mm instead of *c.* 40 mm); (8) apparently smaller size.

We assessed these parameters in the two “new” skins of *kawalli* and added to them the colour of the crown, the colour of the legs, and the number of rectrices. We ourselves noted that there were possibly consistent features in the crown and leg colour, while the number of rectrices was mentioned by Stresemann (1924), who counted 14 in the Berlin male. (Stresemann also incidentally remarked on the absence of red on the wing edge of his specimen, and the reduced width of its tail band; he did not comment on its bare facial patch, possibly assuming that this was the result of a particular behaviour in captivity).

The two *kawalli* are extremely similar in appearance, but the male appears to be larger, with a discernibly stouter bill (in both depth and breadth), and has a far more obvious facial patch; the female has the leading primary of one wing (the right) yellow, and the shafts of some feathers under the eye are rufous, giving each cheek a slightly ruddy tinge. The following is a composite description of the two birds.

The bill is dull creamy white on the lower mandible, pale slate on the upper mandible but with the base below the cere creamy white (and slightly raised to form a plate). Apart from bare skin on the cere, around the eye and bordering the bill, the head is green, the feathers on the mid-crown with slight black edging, becoming increasingly pronounced on the nape and mantle, so that the mantle has a scaly appearance (and the green in this one area possesses a slight floury tone). The feathering around the periorbital skin is a brighter, slightly bluish, green. The sides of the neck, the throat and the upper breast are bright iridescent green, becoming matter and slightly darker on the lower breast and belly, with very faint irregular barring or scaling caused by thin dark edges to feathers (virtually invisible in the female). The abdomen and thighs are slightly lighter green, and the undertail-coverts are greenish-yellow. The wing-coverts are green, with an indistinct yellowish patch along the edge below the carpal joint. The primaries (only partly accessible) are green on the proximal and bluish on the distal half of the outer vane, black on the inner vane. The speculum is red. The back and rump are green, the uppertail-coverts likewise but with very slight yellowish-green iridescent edges. The tail is green for three-quarters its length, with a greenish-yellow terminal band. At least two (and in the case of the male four) of the outermost rectrices have red on the inner half of both vanes, in some cases bordered distally with brownish-black (there is a fringe of blue on the outer vane of one outermost rectrix of the male).

The plumage differences of these birds from *farinosa* are consistent with those given by Grantsau & Camargo (1989), and are presented with our own data for both *farinosa* and *mercenaria* in Tables 1 and 2 (Table 2 including measurements from a third “new” specimen of *kawalli* reported below). As must be clear from the evidence both above and below, we conclude that all three “new” specimens should be formally reassigned to the new species *Amazona kawalli*.

A third specimen (in Brazil) and published photographs

Grantsau & Camargo (1989) mentioned that Kawall had indicated to them the presence of a specimen of *kawalli* in the Museu Paraense Emílio Goeldi, in Belém, Pará, Brazil. They did not, however, make further reference to this bird, other than to report its provenance as Santarém, Pará. However, D. C. Oren (*in litt.* 1995) kindly reports that

TABLE 1

Points of comparison in the plumage of three species of *Amazilia*. In column for number of rectrices, the number in brackets is the number of specimens; in the case of the Berlin *A. karealli*, one of the 14 feathers had been removed and left with the specimen. Material consulted (all BMNH except the Berlin *karealli*): *A. f. chapmani* 89.1.30.313, 89.1.30.312, 91.1.23.81, 91.1.23.79, 1902.3.13.1406; *A. f. vireniticeps* 1949.58.133, 72.5.29.4, 90.6.1.187, 89.1.30.317, 89.1.30.319; *A. f. inornata* 91.2.12.38, 91.2.12.40, 91.2.12.39, 1936.1.21.357; *A. f. guatemalae* 89.1.20.646, 61.7.16.1, 89.1.30.316, 65.5.19.74, 89.1.30.314; *A. f. farinosa* 1922.3.5.1237, 1922.3.5.1230, 1922.3.5.1228, 1922.3.5.1235, 1995.6.1; *A. karealli* 1891.4.1.48, ZNIB 23.160; *A. m. mercenaria* 1902.3.13.1407, 1902.3.13.1408, 89.1.30.346.

	Leg colour	Bill colour	Facial patch	Ocular ring	Crown	Body	Wing edge colour	Number of rectrices	Tail pattern
<i>A. f. guatemalae</i>	brownish-black	variable; mostly pale slate, patchily dull creamy	no	large, pale	greenish-blue	floury glaucous green	yellowish-green	12(5)	proximal two-thirds dark green, distal third light green
<i>A. f. vireniticeps</i>	brownish-black	variable; mostly pale slate, patchily dull creamy	no	large, pale	bluish-green	floury glaucous green	yellowish-green	12(4); 8(1)	proximal two-thirds dark green, distal third light green
<i>A. f. chapmani</i>	brownish-black	variable; mostly pale slate, patchily dull creamy	no	large, pale	green, greyish on hind crown	floury glaucous green	red, fringed pale yellow-green	10(3); 7(2)	proximal two-thirds dark green, distal third light green
<i>A. f. inornata</i>	brownish-black	variable; mostly pale slate, patchily dull creamy	no	large, pale	green, greyish on hind crown	floury glaucous green	red, fringed pale yellow-green	12(4)	proximal two-thirds dark green, distal third light green
<i>A. f. farinosa</i>	brownish-black	variable; mostly pale slate, patchily dull creamy	no	large, pale	green (some with yellow mid-crown)	floury glaucous green	red, fringed pale yellow-green	12(4); 10(1)	proximal two-thirds dark green, distal third light green
<i>A. karealli</i>	pale brown	creamy-white, pale slate on culmen	yes	fairly small, pale	green	green	yellowish-green	13 + 1(1); 11(1)	proximal three-quarters green, distal quarter yellowish-green; with red and blue on outer feathers
<i>A. m. mercenaria</i>	brownish-black	dark	no	small, pale	green	green	red/yellow interspersed	12(1); 10(1); 6(1)	proximal four-fifths green, distal fifth yellowish-green; red on inner part of distal half of five outer feathers, blue on outer vane of outermost

TABLE 2

Mean measurements (in mm), with standard deviations and ranges, of three species of *Amazona*, taken from the same specimens used for Table 1, with the inclusion of those for MPEG 14.804 from Table 3. All bills were measured cere to tip, and all wings curved.

	Bill	Wing	Tail
<i>Amazona mercenaria</i> (n=3)	29.2, s.d. 1.15 (28.1–30.4)	222.7, s.d. 7.1 (215–229)	98.7, s.d. 4.4 (93.7–101.5)
<i>Amazona farinosa</i> (n=24)	37.9, s.d. 2.19 (33.8–43.0)	251.9, s.d. 10.67 (232–274)	136.5, s.d. 9.59 (121.0–153.4)
<i>Amazona kawalli</i> (n=3)	37.6, s.d. 1.68 (36.2–39.5)	252.3, s.d. 10.59 (241–262)	117.0, s.d. 3.43 (113.9–120.7)

TABLE 3

Measurements (in mm) of three specimens of *Amazona kawalli*. Those for the MPEG bird were taken by D. C. Oren. All bills were measured cere to tip, and all wings curved.

	Sex	Bill	Wing	Tail
ZMB 23.160	male	39.5	262	113.9
BMNH 1891.4.1.48	female	36.2	241	116.5
MPEG 14.804	female	37.25	254	120.7

the specimen, an adult female (MPEG 14.804), was collected not at Santarém but at Itaituba (4°17'S, 55°59'W), Pará, on 7 November 1955, by J. Hidasi; its label also states "forest" and "fruits". It possesses all eight characters mentioned in Grantsau & Camargo's diagnosis. In addition, Oren notes that its grey periorbital ring is smaller in extent than the white one of *farinosa*; that the feathers above and behind the eye have a definite bluish tinge to them, almost forming a superciliary stripe; and that the width of the tail-band is 30 mm as against the 60 mm or so that are usual for *farinosa*. His measurements of it are in Table 3.

At least three colour photographs of specimens of *kawalli* have been published, one of them in several places. This last, taken by T. Brosset, can be seen in Bosch & Wedde (1981), Pinter (1988), Anon. (1991), Alderton (1991) and Arndt (1991). According to Low (1990) it depicts a bird living in London Zoo from at least the early 1970s until the mid-1980s, exhibited as a *farinosa* but which she had judged ten years earlier (in Low 1980) to be a *mercenaria* (although she specifically noted, as "an interesting feature", "the wide area of bare white skin on each side of the lower mandible"). T. Brosset (verbally 1995) has confirmed that he took this photograph in London Zoo in 1975; Bosch & Wedde (1981) captioned it as *A. farinosa virenticeps*, Pinter (1988) as *A. f. farinosa*. However, at least four diagnostic features are evident: the facial skin at the base of the bill is bare and white, the periorbital ring is grey (and small), the tail shows red bases to the outer feathers, and the

terminal band is only about one-quarter the tail length. Moreover, the bill is apparently grey and yellow, the leading edge of the wing looks to have no red, and the coloration seems to lack typical *farinosa* mealiness. As Low (1992) remarks that *kawalli* is not known outside Brazil, we conclude that this bird is dead, but we have not been able to establish the fate of the skin.

The second photograph appears next to the first in Anon. (1991) and Arndt (1991). It is a head and shoulders shot by S. Patzwahl which also shows the bill colour, facial patch and small grey periorbital ring. However, as this is one of Kawall's captive birds (T. Arndt verbally 1995) it cannot be considered as independent evidence with which to verify the original description.

The third photograph is in Low (1992) and was taken by the author herself in poor light conditions during a visit to N. Kawall (R. Low verbally 1995). On the opposite page is a *farinosa*, taken in much fuller light, whose single most striking difference lies in its large, creamy white periorbital ring. The shot of *kawalli* depicts an inconspicuous mid-grey periorbital ring and a bare, off-white facial patch, and indeed a series of photographs of several different birds taken by AJP in July 1991 and May 1993 at N. Kawall's aviaries clearly shows these features. However, the periorbital ring consistently appears to be *pale* grey; Grantsau & Camargo (1989) may be mistaken in calling it dark grey. These various photographs also reveal some consistent pattern of slaty grey and creamy yellow on the bill; the feet pale grey; and a very indistinct blackish tinge to the feathers running from the front of the periorbital ring to the cere (this feature is barely present in the two European specimens and appears to be formed by rudimentary rectal bristles).

The validity of the species

We find that the formal plumage description of the holotype in Grantsau & Camargo (1989) conforms very largely with our own composite description above, and with evidence we adduce from other sources. More importantly, of the eight characters which Grantsau & Camargo (1989) use to distinguish *kawalli* from *farinosa*, we find four to be borne out in the material we examined (see Table 1). These are the existence of bare skin at the base of the bill, the generally (if only slightly) purer green coloration (only the mantle has some of the floury tone that characterises most of the upperparts of *farinosa*), the colour and pattern of the outer tail feathers, and the reduced width of the terminal tail-band. We find that a fifth, the colour of the leading edge of the wing, is borne out at least in the populations where *farinosa* and *kawalli* are sympatric (all South American *farinosa* have red edges). We could not conclusively judge two others, the colour of the bill and the colour of the periorbital ring, which are perhaps best assessed in living birds (although D. C. Oren was able to confirm these features in the MPEG specimen). The curious creamy white plating on the upper mandible below the cere, and the creamy white of the lower mandible (visible in the specimens and in photographs), certainly suggest a

possibly distinctive character; and on photographic evidence the periorbital colour is clearly pale grey. We find no strong evidence of a significant size difference (mean bill and wing lengths are virtually identical in *farinosa* and *kawalli*), but instead consider that the relative shortness of the tail in *kawalli* (no overlap with *farinosa*) can give this impression and should be used as a diagnostic feature (see Table 2). Of the three additional features that we compared—leg colour, head colour and a number of rectrices—we find no ground for confident discrimination.

It is, however, just worth noting that several specimens of *farinosa* showed traces of red and/or blue in the outer tail feathers. Both outermost rectrices on one (89.1.30.316) of the five *guatemalae* examined have blue outer vanes and a spot of red on the greenish-yellow of the inner vane near its centre (this also being noted by Salvadori 1891). Three of five nominate *farinosa* examined have some slight but distinct blue edging on the outer vane of the outermost feather (again as noted by both Salvadori 1891 and Forshaw 1989), and one of these (1922.3.5.1235) has a second outermost feather with the proximal half indigo and the fringes of the distal half tinged pink. Three *virenticeps* have a small red patch on the yellow half of the outermost rectrices, one (1949.58.133) with blackish-blue or brownish patches in the centres of several other feathers. Nevertheless, none of these specimens approaches the vivid tail pattern shown by the two *kawalli*, and none shows the other key features (facial patch, reduced tail-band).

Altogether, therefore, we believe that the case for accepting *Amazona kawalli* as a good species, on all the evidence above, is overwhelming. We conclude that six of the eight characters claimed to distinguish *kawalli* from *farinosa* (facial patch, periorbital colour, general coloration, wing edge colour, tail coloration, tail band width) are certainly valid, while one (overall size) is more properly related to diagnosably different tail length, and the last (bill colour) requires conclusive demonstration. On this basis the idea that *kawalli* is an aberrant form of *farinosa* cannot be sustained.

The idea that *kawalli* might only be a race of *farinosa* is also unsustainable, as the two birds are too closely sympatric. If we assume that the bird seen by Ribeiro (1920)—in a reference traced by Stresemann (1924)—was indeed *kawalli*, we now have four localities from which the form is known: Ribeiro's Foz do Castanho (now Foz Roosevelt on the Rio Roosevelt at its confluence with the Aripuanã, southern Pará, at around 7°35'S, 60°20'W: Paynter & Traylor 1991, P. E. Vanzolini verbally 1995), Mato-Piri on the Juruá (apparently at 6°30'S, 69°30'W, if indeed it is or was around "ten leagues"—i.e. c. 50–60 km—below Eirunepé: Paynter & Traylor 1991), Itaituba (4°17'S, 55°59'W) and Santarém (2°26'S, 54°41'W). According to D. F. Stotz (*in litt.* 1995), the Field Museum of Natural History (FMNH), Chicago, possesses material of *farinosa* from Tapaiuna (also written Itapaiuna), which is both closer to Santarém than Fordlândia (mentioned by Grantsau & Camargo 1989) and also on the right bank of the Tapajós (Vanzolini 1992), and from Urucurituba, which is "not far" from

Itaituba (Vanzolini 1992). *Amazona farinosa* has been found in the Tapajós National Park, close to Itaituba (Oren & Parker in prep.). Moreover, Gyldenstolpe (1945, 1951) referred to a specimen of *farinosa* from Caxiricatuba on the lower Tapajós, very close to Santarém. Grantsau & Camargo (1989) themselves mention specimens of *farinosa* from Eirunepé, only 60 km from the type-locality of *kawalli*, and Gyldenstolpe (1945, 1951) also had a specimen from there (under its former name of João Pessoa). All this evidence points to the geographical overlap between *kawalli* and *farinosa* being complete.

Finally, any suspicion that *kawalli* could somehow represent a lowland form of *Amazona mercenaria* can be dispelled by reference to Tables 1 and 2. Although the latter possesses a similar tail pattern and overall body plumage, it is altogether a smaller bird with a notably smaller, all-dark bill, a fully feathered face, and red in the edge of the wing.

The validity of the name

Despite finding that Ribeiro (1920) had mentioned once seeing a red-tailed *farinosa* in the field, and despite noting the absence of red on the edge of the wing and the relative shortness of the tail and consequently smaller breadth of the terminal band, Stresemann (1924) decided against identifying the Berlin Zoo specimen as a new race of *farinosa*, referring to it instead as a "curious mutation" ("merkwürdige Mutation"); but to call it to wider attention he gave it the name *Amazona farinosa aberratio rubricauda*. Unfortunately, no wider attention was caught, and in reviewing the articles of the *International Code of Zoological Nomenclature* we conclude that it consequently has no claim to validity. Thus Article 45f (iv) confirms that the name *rubricauda* is infrasubspecific; and although Article 10c indicates that such a name becomes available when used for a species or subspecies, Article 23j states that it remains unavailable until it is actually *used* as a specific or subspecific name, at which point it takes the date and author of the publication which so uses it. If, therefore, another name is meanwhile applied to the taxon with appropriate supporting evidence, as *kawalli* has been, then any pre-existing infrasubspecific name, used specifically or subspecifically for that taxon *after* the use of the other name, must become a junior synonym. Thus we judge that *kawalli* must stand, even if *rubricauda* is now used elsewhere. This view appears to be reinforced by Article 45g, which indicates that a clearly intended infrasubspecific name—one qualified as a "variety" or "form", but on the evidence of Article 45f (ii) also including "aberration"—remains unavailable if before 1985 it was never adopted as a specific or subspecific name or treated as a senior homonym.

There then remains the question of the most appropriate English name for the species. The name Kawall's Amazon has already been used (e.g. Anon. 1991, Arndt 1991, Low 1992) and it may be sensible to retain it. However, there has in recent years been a strong trend away from the adoption of personal possessive names for species, which can sometimes hinder the ability to motivate local people for their conservation. An English name that reflects a key locality or habitat, or

else indicates a diagnostic feature, is often to be preferred. The apparent confinement of *A. kawalli* to the Amazon Basin does not help ("Amazon Amazon"); its habitat remains to be established but may not be distinctive; and any distinguishing features need to be reasonably obvious in the field. Among the options based on the latter, "Red-tailed" is already taken, while "Short-tailed" would run the risk of confusion with the Short-tailed Parrot *Graydidascalus brachyurus* (many bird lists use "parrot" rather than "amazon" for the genus *Amazona*), but "White-faced" may be worth consideration. We propose waiting for comments on diagnostic field characters when the species is next encountered in the wild.

Conservation

Amazona kawalli is clearly a very difficult species to detect, being extremely close to *A. farinosa* and coming from what is still a very poorly known region of South America. It may well be a rarer bird than *farinosa*, which itself does not appear to be very common in the Amazon Basin. There may, however, prove to be some habitat specialisation that separates the two.

Nevertheless, *kawalli* is now known from three and probably four localities within the Amazon Basin, spanning 1700 km. It seems improbable that the records in question represent the only populations of the species; others can be expected in due course, perhaps not only between the two outermost sites but also beyond them. Careful examination of skins of *farinosa* and *mercenaria* in museums may also throw up such records. On the other hand, we cannot automatically assume that *kawalli* is secure simply because it occupies a longitudinally extensive range. The disappearance of the Wattled Curassow *Crax globulosa* from along the Amazon and its tributaries, caused by hunting and habitat loss (Collar *et al.* 1992), is a warning against complacency over the security of Amazonian birds, especially those that are (or may be) confined to the immediate environs of big rivers. We believe the most appropriate of the new IUCN categories for *Amazona kawalli* is "Data Deficient", which means that there is at present inadequate information to make a direct or indirect assessment of its risk of extinction, and which therefore draws the attention of researchers to the importance of obtaining fuller data in order to include or discount it as a threatened species.

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